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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,038	12/20/2005	Hiroyuki Yoshida	10873.1679USWO	8555

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EXAMINER	
PRINCE, FRED G	

ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,038	YOSHIDA, HIROYUKI	
	Examiner	Art Unit	
	FRED PRINCE	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7-9 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Harada et al. (US Pat No 5,057,220).

Harada et al. teach a method for producing methane gas from organic wastes, which may include activated sludge (col. 3, lines 3-5 and 26-40), comprising: treating organic wastes with at least one of supercritical water and sub-critical water to convert the organic wastes into low molecular weight substances (col. 5, lines 9-30); separating a water phase from the treated substances (col. 8, lines 6-9; col. 10, lines 58-65); and subjecting the water phase to methane fermentation (59) for a period within the recited range (col. 5, lines 58-63), wherein the water phase includes acetic acid (col. 9, lines 12-16) and adjusting one of treatment time or temperature for coversion of low molecular weight substances (col. 5, lines 16-20).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 7-8, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuzawa et al. (JP 2002-066507) in view of Harada et al. (US Pat No 5,057,220).

Matsuzawa et al. disclose a method for producing methane gas from organic wastes, comprising: treating organic wastes with at least one of supercritical water and sub-critical (paragraph 0012) water to convert the organic wastes into low molecular weight substances (paragraph 0015); and subjecting the treated substances to methane fermentation (4; paragraph 0015). Matsuzawa et al. do not disclose separating a water phase from the treated substances prior to methane fermentation.

In any event, Harada et al. disclose the well known concept of separating a water phase from a treated substance prior to anaerobic methane fermentation (59) of the water phase in order to, for example, remove substances likely to impede methane fermentation (col. 5, lines 32-48).

Accordingly, it would have been readily obvious for the skilled artisan to modify the method of Matsuzawa et al. such that it includes the well known concept of separating a water phase from a treated substance prior to anaerobic methane fermentation of the water phase in order to, for example, remove substances likely to impede methane fermentation, as suggested by Harada et al.

5. Claims 1-3, 4-5, 7-8, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (JP 2002-102870) in view of Harada et al. ('220).

Yamashita et al. teach a method for producing methane gas from organic wastes, comprising: treating organic wastes with at least one of supercritical water and sub-critical (abstract; col. 4) water to convert the organic wastes into low molecular weight substances (abstract); and subjecting the low molecular weight substances to methane fermentation (abstract). Yamashita et al. do not disclose separating a water phase from the treated substances prior to methane fermentation.

In any event, Harada et al. disclose the well known concept of separating a water phase from a treated substance prior to anaerobic methane fermentation (59) of the water phase in order to, for example, remove substances likely to impede methane fermentation (col. 5, lines 32-48).

Accordingly, it would have been readily obvious for the skilled artisan to modify the method of Yamashita et al. such that it includes the well known concept of separating a water phase from a treated substance prior to anaerobic methane fermentation of the water phase in order to, for example, remove substances likely to impede methane fermentation, as suggested by Harada et al.

6. Claims 1-3, 5, 7-8 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. ("Catalytic Wet Oxidation Process for Wastewater Treatment", from Applicant's IDS filed December 2, 2005) in view of Harada et al. ('220).

Harada et al. (IDS) disclose a method for producing methane gas from organic wastes, comprising: treating organic wastes with at least one of supercritical water and sub-critical (page 3) water to convert the organic wastes into low molecular weight

substances (page 5); and subjecting the low molecular weight substances to methane fermentation (page 6; Fig. 4). Harada et al. (IDS) do not disclose separating a water phase from the treated substances prior to methane fermentation.

In any event, Harada et al. ('220) disclose the well known concept of separating a water phase from a treated substance prior to anaerobic methane fermentation (59) of the water phase in order to, for example, remove substances likely to impede methane fermentation (col. 5, lines 32-48).

Accordingly, it would have been readily obvious for the skilled artisan to modify the method of Harada et al. (IDS) such that it includes the well known concept of separating a water phase from a treated substance prior to anaerobic methane fermentation of the water phase in order to, for example, remove substances likely to impede methane fermentation, as suggested by Harada et al.

7. Claims 1-3, 5, 7-8 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. ("Developing Wastewater Recycling Technologies by Catalytic Wet Oxidation Process", from Applicant's IDS filed December 2, 2005) in view of Harada et al. ('220).

Inoue et al. disclose a method for producing methane gas from organic wastes, comprising: treating organic wastes with at least one of supercritical water and sub-critical (page 11) water to convert the organic wastes into low molecular weight substances (page 12); and subjecting the low molecular weight substances to methane fermentation (page 12). Inoue et al. do not disclose separating a water phase from the treated substances prior to methane fermentation.

In any event, Harada et al. (220) disclose the well known concept of separating a water phase from a treated substance prior to anaerobic methane fermentation (59) of the water phase in order to, for example, remove substances likely to impede methane fermentation (col. 5, lines 32-48).

Accordingly, it would have been readily obvious for the skilled artisan to modify the method of Inoue et al. such that it includes the well known concept of separating a water phase from a treated substance prior to anaerobic methane fermentation of the water phase in order to, for example, remove substances likely to impede methane fermentation, as suggested by Harada et al.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Matsuzawa et al., Yamashita et al., Harada et al. (IDS) and Inoue et al. in view of Harada et al. ('220).

The primary references are described above. The references do not disclose the methane fermentation having a carbon digestion efficiency at the recited percentage. It is submitted that it is known in the art to break down complex organics into low-molecular weight compounds prior to a methane fermentation stage in order to increase the efficiency and purity of the methane produced (see, for examples, US Pat No 4,722,741 to Hayes et al. and US Pat No 4,067,801 to Ishida et al.) and it is known in the art that residence time effects the degree of conversion, wherein conversion may be as high as 90% with a residence time of a few hours depending on the carbon load (see, for example, US Pat No 4,609,460 to Vellinga). Accordingly, it is submitted that it is well within the purview of the skilled artisan to utilize produce methane in such a way

that carbon digestion efficiency is at least 90% in order to, for example, degrade a given amount of carbon compounds.

Response to Arguments

9. Applicant's arguments filed June 16, 2008 have been fully considered but they are moot in view of the new grounds of rejection necessitated by applicant's amendment.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRED PRINCE whose telephone number is (571)272-

1165. The examiner can normally be reached on Monday-Thursday, 6:30-4:00; alt. Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Fred Prince/
Primary Examiner, Art Unit 1797

fgp
8/19/08